

CLAIMS

1. A bushing for an electrical device, comprising an insulating core (1, 7, 9), **characterized** in that at least a
5 part of the insulating core (1, 7, 9) comprises a continuous diffusion barrier (2, 8) with firm adhesion to the insulating core (1, 7, 9).
2. A bushing according to claim 1 **characterized** in that the
10 diffusion barrier (2, 8, 11, 12) comprises a continuous film.
3. A bushing according to claim 1 or 2, **characterized** in
that the insulating core (1, 7, 9) is hollow and that at least
15 part of the inside of the insulating core (1, 7, 9) is coated with the diffusion barrier (2, 8).
4. A bushing according to any of the preceding claims,
characterized in that the insulating core (1, 7, 9) comprises
a body of epoxy resin impregnated paper.
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5. A bushing according to any of the preceding claims,
characterized in that an outer hollow insulator (10) is
arranged outside the insulating core (1, 7, 9), and that at
least a part of the outer hollow insulator (10) is coated with
25 the diffusion barrier (11, 12).
6. A bushing according to any of the preceding claims,
characterized in that essentially the whole surface of the
outer hollow insulator (10) is coated with the diffusion
30 barrier (11, 12).
7. A bushing according to any of the preceding claims,
characterized in that the diffusion barrier (2, 8, 11, 12)
comprises at least one of the following; an inorganic film, an
35 organic film or an organic/inorganic hybrid film.

8. A bushing according to any of the preceding claims, **characterized** in that the diffusion barrier (2, 8, 11, 12) comprises a multi-layer film.

5 9. A bushing according to any of the preceding claims, **characterized** in that the diffusion barrier (2, 8, 11, 12) comprises particles of hybrid or inorganic nature.

10 10. A bushing according to any of the preceding claims, **characterized** in that the diffusion barrier (2, 8, 11, 12) has a coefficient of water permeability smaller than $0,1 \text{ g.m}^{-2}.\text{day}^{-1}$.

15 11. A bushing according to any of the preceding claims, **characterized** in that the diffusion barrier (2, 8, 11, 12) is deposited on at least part of the insulating core (1, 7, 9) and/or the outer hollow insulator (10) by one of the following methods; dipping, painting, spraying, plasma arc, sol-gel technology, Physical Vapor Deposition (PVD) or Chemical Vapor
20 Deposition (CVD).

12. A method for manufacturing a bushing for an electrical device, the bushing comprising an insulating core (1, 7, 9), **characterized** in coating at least a part of the insulating
25 core (1, 7, 9) with a continuous diffusion barrier (2, 8) with firm adhesion to the insulating core (1, 7, 9).

13. A method according to claim 12, **characterized** in coating at least a part of the insulating core (1, 7, 9) with a
30 continuous film.

14. A method according to any of claims 12-13, **characterized** in that the insulating core (1, 7, 9) is hollow, and in coating at least part of the inside of the insulating core (1,
35 7, 9) with the diffusion barrier (2, 8)

15. A method according to any of claims 12-14, **characterized** in arranging an outer hollow insulator (10) outside the insulating core (1, 7, 9), and coating at least a part of the outer hollow insulator (10) with the diffusion barrier (11, 12).

16. A method according to any of claims 12-15, **characterized** in coating essentially the whole surface of the outer hollow insulator (10) with the diffusion barrier (11, 12).

17. A method according to any of claims 12-16, **characterized** in coating the insulating core (1, 7, 9) and/or the outer hollow insulator (10) with the diffusion barrier (2, 8, 11, 12) comprising at least one of the following; an inorganic film, an organic film or an organic/inorganic hybrid film.

18. A method according to any of claims 12-17, **characterized** in coating the insulating core (1, 7, 9) with a diffusion barrier (2, 8, 11, 12) comprising a multi-layer film.

19. A method according to any of claims 12-18, **characterized** in depositing the diffusion barrier (2, 8, 11, 12) on at least part of the insulating core (1, 7, 9) and/or the outer hollow insulator (10), by one of the following methods; painting, dipping, spraying, plasma arc, sol-gel technology, Physical Vapor Deposition (PVD) or Chemical Vapor Deposition (CVD).

20. Use of a bushing according to any of claims 1-11 in a medium voltage or high voltage electrical device, such as a transformer.

21. Use of a bushing manufactured according to any of claims 12-19 in a medium voltage or high voltage electrical device, such as a transformer.